

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
Before the Board of Patent Appeals and Interferences

In re Patent Application of

Atty Dkt. SCS-550-318

NIGHTINGALE et al

C# M#

TC/A.U.: 2128

Serial No. 10/079,811

Examiner: S. Patel

Filed: February 22, 2002

Date: January 29, 2007

Title: SOFTWARE AND HARDWARE SIMULATION



Mail Stop Appeal Brief - Patents

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

☐ **Correspondence Address Indication Form Attached.**

☐ **NOTICE OF APPEAL**

Applicant hereby **appeals** to the Board of Patent Appeals and Interferences
from the last decision of the Examiner twice/finally rejecting
applicant's claim(s).

\$500.00 (1401)/\$250.00 (2401) \$

☐ An appeal **BRIEF** is attached in the pending appeal of the
above-identified application

\$500.00 (1402)/\$250.00 (2402) \$

☐ Credit for fees paid in prior appeal without decision on merits

-\$ ()

☒ A reply brief is attached.

(no fee)

☐ Petition is hereby made to extend the current due date so as to cover the filing date of this
paper and attachment(s)

One Month Extension \$120.00 (1251)/\$60.00 (2251)
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Any future submission requiring an extension of time is hereby stated to include a petition for such time extension.
The Commissioner is hereby authorized to charge any deficiency, or credit any overpayment, in the fee(s) filed, or
asserted to be filed, or which should have been filed herewith (or with any paper hereafter filed in this application by this
firm) to our **Account No. 14-1140**. A duplicate copy of this sheet is attached.

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By Atty: Stanley C. Spooner, Reg. No. 27,393

Signature: _____



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REPLY BRIEF

This Reply Brief is responsive to the new points of argument raised in the
Examiner's Answer mailed November 29, 2006.

**I. The Examiner's quote confirms his basic
misunderstanding of the prior art and the
claimed invention**

The Examiner's quote that the Hollander system "must be able to simulate the individual modeled software and hardware components of the DUT" evidences his basic misunderstanding. The simulation of the DUT as a unit is not necessarily the same as the simulation of the individual components **and** their interactions in order to find out where and why any problems are created.

For example, the simulation of a car as a DUT would involve providing human inputs to the car with an output indication as to the direction of movement, acceleration and deceleration of the car. However, a simulation of the individual components of the car, i.e., the steering wheel, accelerator and brake pedal would have to be modeled and then the inputs to the steering mechanism, the engine/transmission and the brake system, respectively, would be applied and the modeling of their interaction, would provide the cars outputs. While it could provide the same output, it might not because of an unanticipated interoperability problem between the components, and such problem is not necessarily obvious to one of ordinary skill in the art.

As noted in Appellants' specification in the present case, modeling (i) the software component using a software simulator, (ii) the hardware component with a hardware simulator, (iii) linking the simulators to model interaction, (iv) generating stimuli for both the software component and hardware component, and then in order to permit verification of interoperability, (v) modeling the responses of the software component to the software stimulus, (vi) the hardware component to the hardware stimulus wherein the software stimulus is passed by using a **remote procedure call**, all combines to provide a more accurate realistic method of simulating a system having software and hardware components.

Hollander in Figure 1 clearly shows that the only structure being tested is the single "device under test (DUT)" in block 38. Thus, in Hollander, the car is being tested, but the individual components making up the car and their interoperability is not being modeled or tested.

II. The Examiner still fails to identify any indication in Hollander that meets the claimed step of “modeling operation of said software component using a software simulator”

The Examiner’s quote that Hollander “must be able to simulate . . .” is an implicit admission that there is no disclosure in Hollander of the claimed “modeling operation of said software component.”

The Appeal Brief section A(1) pointed out that the Examiner’s argument that numerous portions of the Hollander reference taught the claimed method step was totally unsupported by the Examiner’s citations to col. 8, lines 39-44 and col. 10, lines 51-58. Those citations have nothing to do with the claimed method step. The Examiner’s Answer ignores this fatal problem and fails to provide any citation to Hollander or any other reference which supports his allegation of disclosure in Hollander.

III. The Examiner still fails to identify any indication in Hollander that meets the claimed “generating” step in which “said modeled interaction between said software component and said hardware component proceeds independently of said test controller.”

In the first paragraph under Examiner’s Answer on page 10, the Examiner misquotes the portion of the claimed step **and** then erroneously alleges that the misquoted portion is disclosed in Hollander.

The full quote in claim 1 is “wherein said modeled interaction between said software component and said hardware component proceeds independently of said test controller.” The Examiner’s quote omits “said modeled” at the beginning of the quote and instead starts “interactions between . . .” This erroneous quote conveys the

misimpression that the claim is directed to actual interactions between components rather than the previous described and claimed (in the “linking” step) “said modeled interactions.” Therefore, at a minimum, the Examiner misunderstands the claimed invention. The fact that the Examiner cannot find any corresponding structure in accordance with the complete quote in the cited prior art is dispositive of the improper rejection issue.

The Appeal Brief section A(2) pointed out that in the Examiner’s argument numerous portions of the Hollander reference taught the claimed method step was totally unsupported by the Examiner’s citations to col. 5, lines 21-24 and col. 8, lines 24-32. As explained in the Brief, those portions of Hollander have nothing to do with the claimed method step.

Instead of identifying some portion of Hollander which discloses the claimed feature of the step, i.e., “said modeled interaction . . . proceeds independently of said test controller,” the Examiner misconstrues the claimed language to read actual “interactions” and then suggests these are shown in Hollander. As stated in the Appeal Brief, the Examiner has indentified no portion of Hollander which discloses the “generating” step in which the “modeled interaction . . . proceeds independently of said test controller.”

Moreover, the Examiner (page 10, 4th full paragraph) also attempts to use a partial quote from the Appeal Brief as support for his position. The Appeal Brief (section A(2) page 12, last full sentence) states “While this language [in the Hollander reference] may be considered broad enough to cover Applicant’s claimed subject matter, it does not disclose the claimed subject matter.” The Examiner omits the second half of the quote,

i.e., “it does not disclose the claimed subject matter.” The misleading nature of this partial quote is readily apparent.

Furthermore, the Examiner does not provide any legal support for his unique position that a prior art reference anticipates or renders obvious all steps **covered** by a generic disclosure, whether or not there is any actual disclosure of the claimed step. In fact the Examiner’s legal position is contrary to patent law. There have been numerous instances where a patent has issued with broad generic claims and yet subsequent patents issue which are directed to various newly discovered species, which are covered by the issued generic claim, but are clearly patentable improvements under the patent statutes.

There is no support for the Examiner’s position that a reference that “covers” claimed structure somehow discloses that structure.

IV. The Examiner doesn’t indicate where Pratt teaches the claimed “(vi) modelling” step

In the Appeal Brief, section A(3) first sentence Appellant notes that the Examiner doesn’t rely on Hollander for a teaching of the “(vi) modeling” step and instead relies upon Platt. It is agreed that Platt teaches the use of a “procedure call,” but the point made in the Appeal Brief is that there is no recognition of the difficulty in applying the Platt teaching to the Hollander reference.

Appellant previously pointed out that the Examiner fails to “provide any indication of how one of ordinary skill in the art would be directed to apply remote procedure calls as a communication means in the Hollander reference.” Appellant goes on to point out that this is significant because “the test controller 166 and the external

software 163 (as shown in Figure 5 of Hollander) **exist in entirely separate domains with no apparent communications link available** in order to implement the ‘remote procedure call’ solution disclosed in Appellant’s invention.” (emphasis in original). This problem is clearly shown in Hollander Figure 5.

The Examiner’s Answer pages 11-12 responds by quoting different passages from the previously relied upon section of Hollander (col. 10, lines 34-64) but fails to cite anything which disputes Appellants contention that the test controller 166 and the external software 163 exist in entirely separate domains with no apparent communications link available – **therefore a “remote procedure call” could not be used.**

In response to Appellants’ argument that there is no teaching in Hollander or Platt as to how the remote procedure call could be implemented, the Examiner merely asserts that Hollander discloses a communication link and “Platt **could** be incorporated into the Hollander solution.” (emphasis added). “Could be incorporated” does not evidence any combination of references.

Moreover, even if the Examiner’s contention is correct and the references “could” be combined, this is not the test of obviousness – as noted in the Appeal Brief, there must be some reason or motivation for combining references and the fact that they could be combined does not make the combination obvious.

**V. The Examiner ignores the secondary references
portion of the Appeal Brief**

The Appeal Brief, at section (B) page 16, points out that the cited secondary references do not supply the method steps which are alleged to be missing from the Hollander reference, i.e., steps (i), (iv) and (vi).

The Appeal Brief on Page 17 cites the *In re Fine* case for the interpretation under 35 USC §103 that the “burden” is on the Examiner to show where claimed elements are in the cited prior art. Because, the Examiner does not dispute anything in section B he is presumed to concur in the points raised in the Appeal Brief, i.e., that the secondary references do not teach steps (i), (iv) and (vi), and instead relies solely upon his misinterpretation of Hollander for such teaching.

**VI. The Examiner fails to provide the required “reason”
or “motivation” for combining references**

Beginning on page 18, the Appeal Brief notes that the Examiner is simply not permitted to pick and chose method steps and structures from among various references and then combine them in the manner of applicants claims. The Examiner responds by arguing that, “Hollander expresses a need for a faster simulation, which would be provided by the use of remote procedure calls, because this results in a high performance system (Platt column 7, lines 32-36).” However, the cited portion of the Platt reference has nothing to do with a remote procedure call and thus the Examiner’s argument does not the Federal Circuit’s required “reason” or “motivation.”

Moreover, this cited portion of Platt contains no teaching that the remote procedure call will result in a faster simulation or disclosure of how it could possible be combined with the Hollander reference or that, when combined, the resultant system would operate faster.

The Examiner's argument on page 13 that "it is well known in the art that this can be effectively accomplished through the use of start flags and polling" is unsupported by any factual evidence in the record of this Appeal and therefore need not be responded to in this Reply Brief. The burden is on the Examiner to establish a *prima facie* case of obviousness in the Final Rejection and this has not been accomplished in this case.

The Examiner's admission that the Appeal Brief page 21 pointing out that the Platt citation at column 2, lines 66-67 and col. 3, lines 1,2 and 46-57 contains no "motivation" for the combination of references was correct is appreciated. This failure was in both the final rejection (page 11) and in the September 1, 2005 first official action (page 15). The lack of "motivation" in Platt was noted in Appellant's amendment filed December 21, 2005 at pages 21-22. The Examiner now alleges that the required motivation is in the Harmon reference at the same column and line numbers. However, as with his previous allegations that a generic desire for improved performance provides motivation (to pick and chose elements from Hollander and Platt), the confirmation that Harmon's statement that instruction-set simulators permit "much higher performance" **does not provide any motivation** to pick and chose and then combine method steps or elements from the three cited references in the Hollander/Platt/Harmon combination.

The Examiner is simply arguing that because both Hollander and Plate or Hollander, Platt and Harmon would like to have faster simulations it would be obvious to pick and chose elements of one to combine with elements of the other or other two. As noted in the Appeal Brief, this is not the test of obviousness under §103.

Summary

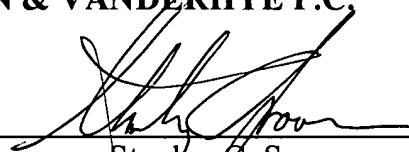
Thus, as can be seen by the above detailed remarks, the Examiner avoids answering the questions and errors noted in Appellants' Brief. This is perhaps a result of the Examiner's misunderstanding of Appellants' invention directed towards simulating a system having two components, whereas Hollander teaches only modeling the overall system. Appellants claim provides a stimulus to the individual components, i.e., the software component which is modeled on a software simulator and to the hardware component which is modeled on the hardware simulator. Hollander simply provides any stimulus to the overall system, i.e., the DUT. The Examiner fails to identify where Hollander teaches the claimed "(i) modelling operation step" and the "(iv) generating with a test controller step." The Examiner does not indicate where or how the Platt reference teaches the claimed step of "(vi) modelling" the hardware response where the software stimulus is passed by means of a "remote procedure call." The Examiner ignores and therefore admits the correctness of section V in the Appeal Brief which points out that none of the secondary references teach the steps (i), (iv) and (vi) from Appellants' claim. The Examiner also provides no "reason" or "motivation" for combining the references in the manner of Appellants' claims.

As a result, as noted in the Appeal Brief, there is simply no support for the rejections of Appellants' independent claims 1, 15 and 16 or claims dependent thereon under the provisions of 35 USC §103. Thus, and in view of the above, the rejection of claims 1-16 is clearly in error and reversal thereof by this Honorable Board is respectfully requested.

Respectfully submitted,

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